

ABSTRACT

When an AC power supply (9) is powered up, a constant current supply section (14) supplies a constant current to a capacitor (C3) to charge the capacitor (C3). When a voltage across the capacitor (C3) becomes equal to or greater than a predetermined voltage, a switch control section (17) sets a switch (13) off. When an output current drops to lead to a light load, a load detecting circuit (15) stops the operation of a PWM control circuit (12) and activates a timer (16). The timer (16) supplies a switch-ON signal to the switch control section (17) when it is activated and a predetermined time measured elapses. When supplied with the switch-ON signal, the switch control section (17) sets the switch (13) on. When the switch (13) is set on, the capacitor (C3) is charged again, applying a voltage to the PWM control circuit (12).